



LIVELIHOOD DIVERSIFICATION STRATEGIES AMONG FOREST ENVIRONMENT DWELLERS IN OLUYOLE LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA

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ABSTRACT

The study was carried out to investigate livelihood diversification strategies adopted by people living in the communities around Gambari Forest Reserve. One hundred copies of structured questionnaire were administered on the respondents to elicit information on the diversification strategies they use to sustain their livelihood. Ninety six copies of the administered questionnaire were found useable for the study. Findings showed that majority (80.1%) of the respondents were between 30-60 years of age, while only 5.2% of them were less than 30 years old. The average age was found to be 49 years, indicating that the dwellers around the forest reserve are in their active age and therefore have the capacity to put more pressure on the forest reserve in their quest for a living. The gender distribution revealed that 57.3% of the people were female and 78.1% of the people were married, with average household size of 6. Findings further showed that there are three major categories of livelihood activities from which the people obtain their livelihood in the study area. These are on-farm, non-farm and off-farm activities. Study further showed that 30% of the respondents entirely depend on the on-farm-only livelihood strategy, 10% on off-farm only strategy, 17% on non-farm-only strategy, while 26% depend on on-farm plus off-farm plus non-farm livelihood diversification strategy.

Keywords: Livelihood diversification, on-farm, off-farm, non-farm, forest reserve



INTRODUCTION

The contribution of forest and forest resources to sustainable livelihoods cannot be over-emphasized. They remain significant to many development efforts and are critical to the reduction of poverty and hunger. They provide livelihood to a greater proportion of world's population (Eric *et al.*, 2014). Forest provides household with income, fuel wood, and food security. It also reduces vulnerability to shocks and adversities and generally increases wellbeing (Eva and Fred, 2013; Fisher and Shively, 2005).

A study by International Union for the Conservation of Nature (IUCN, 2010) points to the fact that forest resources form the basis of the livelihoods of forest fringe communities and the development of the fringe communities. The study has therefore established that the inhabitants of forest enclaves derive products such as canes, pestles, mushrooms, wild animals and fish, as well as snails from the forests and water bodies. However, the overarching issue of contention is that while forest communities derive their livelihood from the natural resources, it is increasingly becoming obvious that if conservation plans are not put in place, the resources would be depleted within the next few years. This is a pointer to the fact that natural resource conservation is critical for the sustainability of natural resources (Eric *et al.*, 2014).

Forest fragmentation and deforestation remain as central problems, primarily to both legal and illegal timber exploitation and arable crop farming in Nigeria (Amisah *et al.*, 2009). The consequence has been a dramatic evolution of strategies to sustain rural livelihoods. In most African countries, the spate of deforestation has increased over the past four decades, with significant effects on rainfall, temperature, water resources, wildfire frequency, agriculture and livelihoods (Amisah *et al.*, 2009). In developing countries, particularly those in Africa, livelihood insecurity remains a major problem (Shepherd *et al.*, 1999). Forest dependent communities in these countries, rely heavily on their farmlands. Many forest dependent households employ a diversity of means to help meet basic needs: food and cash crop production, forest and tree product gathering and income-earning enterprises both on and off the farm. Often, the poorer the household, the more diverse the sources of their livelihood, as the needs for the year must be made up from various off-farm as well as on-farm activities, and often from migrant labor (Shepherd *et al.*, 1999).



The geometric rate at which the once evergreen forests are fast diminishing at the expense of forest communities' livelihoods and development is very alarming, especially with regard to meeting the needs of future generations. An estimated 130 million hectares of forest were lost between 2000 and 2010 worldwide due to deforestation (Food and Agricultural Organization, 2010). While in 1990 forests made up 31.6 percent of the world's land areas, or some 4 128 million hectares, this has changed to 30.6 percent in 2015, or some 3 999 million hectares (FAO, 2018). Deforestation rates remain high and will probably increase in the coming years as the population grows and demand for new settlements, wood for construction, fuelwood, charcoal and food increases (Amisah *et al.*, 2009).

This spate of forest degradation potentially poses enormous adverse effects on forest reserves. These forest communities exert excessive pressure on forest reserves as many of those living in such communities have their livelihoods predicated on the availability, access and utilization of forest products (Appia *et al.*, 2009). The concomitant repercussions associated with this forest degradation include exposing such degraded forest communities as well as their farmlands to high risk of erosions and floods (Edusah, 2011). Additionally, forest degradation risks the quality of life in forest communities and beyond. It militates against the stability of climate and local weather, threaten the existence of other species and undermine the valuable services provided by biological diversity. Ultimately, these affect the livelihoods of the inhabitants of such forest fringe communities who have suffered considerable setbacks due to changing forest cover, thereby engendering livelihood diversification.

Livelihood diversification refers to attempts by individuals and households to find new ways to raise incomes and reduce environmental risk, which differ sharply by the degree of freedom of choice (to diversify or not), and the reversibility of the outcome. Livelihood diversification includes both on- and off-farm activities which are undertaken to generate income additional to that from the main household agricultural activities, via the production of other agricultural and non-agricultural goods and services or self-employment in small firms, and other strategies undertaken to spread risk (Mugagga *et al.*, 2010).

According to Ellis and Allison (2004), livelihood diversification strategies are the combination of activities that people choose to undertake in order to achieve their livelihood



goals. Diversification as a livelihood strategy is defined as a process in which the person or the rural family unit builds a group of activities and goods looking for better ways of living (Ellis, 2000). When area access difficulties are eliminated and opportunities of means of subsistence are identified and extended, the farmer or the farming community develops the capacity to generate livelihood to improve their lives. Livelihood diversification is however necessary for the forest environment dwellers in Oyo State as the land could no longer provide the required livelihood support, due to over exploitation and excessive degradation. Hence, there is the need for additional sources of livelihood support. This therefore necessitated this study, with the aim of examining the livelihood diversification strategies among forest environments' dwellers in Oluyole Local Government Area of Oyo State and with specific focus on surrounding communities of Gambari Forest Reserve.

METHODOLOGY

Study Area

The study was conducted in Gambari Forest Reserve located in Oluyole Local Government Area (LGA) of Oyo state. It is one of the early forest reserves in the state and it is divided into 5 series namely Gambari, Ibusogboro, Onipe, Olonde and Mamu. Gambari forest reserve is a lowland forest, the reserve is located between latitude $7^{\circ} 25'$ and $7^{\circ} 55'N$ and longitude $3^{\circ} 53'$ and $3^{\circ} 9'E$. It is situated at the southern part of Ibadan bounded on the west by River Ona and on the east by the main road of Ibadan to Ijebu-ode. The reserve is bounded by Abanla and Odo ona settlements in Oluyole local government area of Oyo State in the north and in the south by Mamu and Abatan settlements in Ijebu-ode local government area of Ogun State. Both dry and wet season are experienced in the reserve. Dry season lasts for 3months (December to February). The average annual rainfall is about 1140mm and average annual temperature is about $26.4^{\circ}C$ ($80.0^{\circ}F$). The reserve has been reduced to secondary high forest dominated by trees like *Mansonia altissima*, *Triplochiton scleroxylon*, *Terminalia superba*, *Sterculia spp*, *Terminalia ivorensis* and *Cola spp*; the planted area is dominated by *Tectona grandis* and *Gmelina arborea*. The reserve provides 5 major NTFPs namely fuelwood, sponge, snails, leave and ropes (Larinde and Olasupo, 2011). Figure 1 below represents the map of the study area.

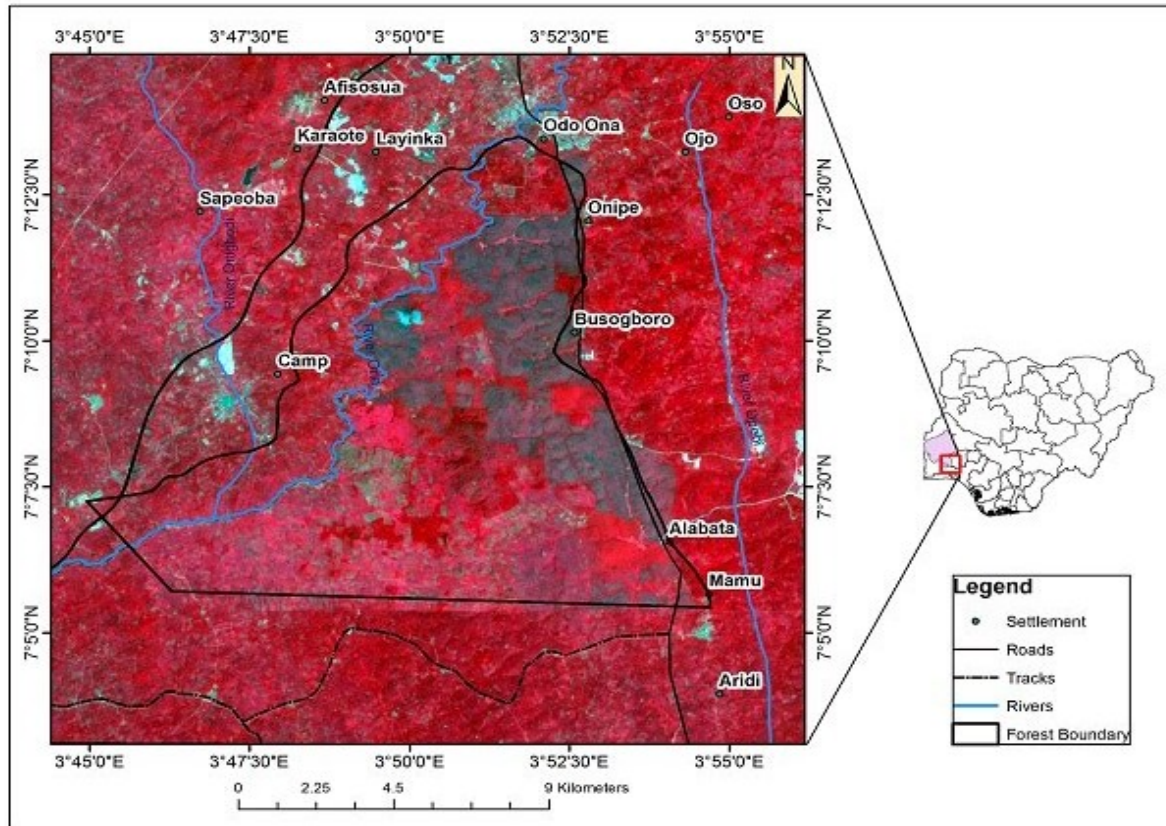


Figure1: Map of Gambari Forest Reserves

Data Collection Method Sampling and Analytical Techniques

Data were collected through the use of structured questionnaire. The questionnaire serve as guide for personal interview conducted on respondents to obtain information on the challenges faced by the communities and the needs of the communities.

Both purposive and random sampling techniques were used in the study. Purposive sampling was applied in selecting the study area (Gambari Reserve) because it is one of the reserves in Oyo State with many surrounding communities. Moreover it is one of the reserves whereby an outstation of Forestry Research Institute of Nigeria is located. However, random sampling technique was used in selecting five of the surrounding communities. The selected communities were Abanla, Ibusogboro, Idi-ayunre, Olonde and Adebayo. From each of the selected communities, twenty (20) copies of questionnaire were randomly administered on respondents, out of which only ninety six (96) were found analyzable. Both descriptive and inferential statistics were used to analyze the data.



Results and Discussion

Table 1 shows the socioeconomic characteristics of the respondents. The socioeconomic characteristics like age, gender, marital status, educational qualifications, religion and household size were examined. The age distribution shows that majority (80.1%) of the respondents were between the age of 30 – 60 years while 5.2% were less than 30 years and the mean age in the study area is 49 years. This implies that the dwellers in the forest environment are in their active age and have the capacity to put more pressure on the forest reserve in the study area for their livelihood. The gender distribution shows that 57.3% of the respondents are female while 42.7% are male. Looking at the educational qualification, majority (78.1%) of the respondents had formal education while 21.1% are not educated. In addition, 62.5% are Christians while 37.5% are Muslims. This shows that there are more Christians living in the forest environment. Majority (78.1%) of the forest environment dwellers are married, 8.3% are single and 13.6% are widow. The mean household size in the study area is 6. This shows that the forest environment dwellers have large household size. This is expected as the study was carried out in rural communities and it is typical of rural households. This large household size may have grave implications for the future existence of the reserve. This is because as the members of households increase and grow older, the demand for farmland may also increase and this may lead to agitation for the release of more portions of the reserves for farming activities. According to Oladiji *et al.* (2016), this means more mouths need to be fed and consequently an increased demand and harvest of NTFPs from the reserves. In addition, experiences in developing countries indicate that large household size is associated with poverty and poverty is a catalyst for environmental degradation in rural areas, as also reported by Oladiji *et al.*, (2016). Furthermore, most (35.4%) of the respondents practice farming as their occupation and 25.0% practice both farming and trade. This indicates why some of the forest environment dwellers convert the reserve for their farming activities.

Table 1: Socioeconomic Characteristics of Respondents

Variable	Frequency	Percentage
<i>Age</i>		
<30 years	5	5.2
30-40 years	18	18.7
41-50years	30	31.2



51-60years	29	30.2
Above 60year	14	14.7
Total	96	100
Gender		
Male	41	42.7
Female	55	57.3
Total	96	100
Religion		
Christianity	60	62.5
Islam	36	37.5
Total	96	100
Marital Status		
Single	8	8.3
Married	75	78.1
Widowed	13	13.6
Total	96	100
Occupation		
Farming	34	35.4
Trading	33	34.4
Artisanship	5	5.2
Farming & trade	24	25.0
Total	100	100
Educational Qualification		
No formal education	21	21.9
Primary education	25	26.0
Secondary education	40	41.7
Tertiary education	10	10.4
Total	96	100
Household Size		
Less than 5	30	31.3
5-10	62	64.6
11-15	4	4.1
Total	96	100

Source: Field Survey, 2017



Table 2 revealed that majority (97%) of the forest environment dwellers are aware of the boundary of the forest reserve, 26.1% of them do not own a land while majority (73.9%) owns a land either through inheritance, purchase or rent. This possibly means that the respondents without land use the reserve because they do not have adequate land they could use for their farming activities. In addition, most of the land holdings in the study area are small as majority of the respondents have lands that is less than 5 hectares. This possibly explains their increased use of the forest reserve in order to use the reserve to complement their small land holdings. Furthermore, majority (76%) of the forest dwellers claimed to own livestock and 37% of these people get feed for their livestock from the forest reserve.

Table 2: Socioeconomic Attributes of Respondents Continued

Variable	Frequency	Percentage
Awareness of the forest reserve boundary		
Yes	93	96.9
No	3	3.1
Mode of Land Acquisition		
Inheritance	22	22.9
Purchase	20	20.8
Rent	24	25.0
Inheritance & purchase	5	5.2
No land	25	26.1
Farm Size		
Less than 5hectares	65	67.7
5-10hectares	26	27.1
More than 10hectares	5	5.2
Ownership of Livestock		
Yes	73	76.0
No	23	24.0
Source of Feed for Livestock		
From the forest reserve	27	37.0
From my compound	22	30.1
From the market	14	19.2
From the bush other than the reserve	10	13.7

Source: Field Survey, 2017



In order to examine the perception of the people of surrounding communities about Gambari Forest Reserve, 8 perceptual statements against a 5-point Likert Scale ranging from strongly agree (5), agree (4), undecided (3), disagree (2) and strongly disagree (1) was administered to the respondents as shown in Table3. Greater percentage (87.51%) of the respondents perceived the regulation of forest resources as being helpful in maintaining sustainable livelihood and 79.17% of these people agreed that the livelihood of the people living around forest reserves is taken into consideration when forest regulations are made. While 89.58% of the respondents either strongly agree or agree that forest affects the economic lives of the people by providing income and job, majority (79.16%) of the respondent agreed that the forest plays important role in protecting and enriching the natural environment and 77.09% believes that the forest reserves help in cooling the environment. This therefore shows that there is the need to regulate human activities in the forest reserve to help protect the environment.

Table3: Perceptions of Surrounding Communities about Sakpoba Reserve

Perceptual statements	SA	A	U	D	SD
Positive statement	5	4	3	2	1
1. Regulation of the forest resources help maintain sustainable livelihood	63 (65.63)	21 (21.88)	8 (8.33)	4 (4.17)	0 (0.0)
2. Livelihood of people taken into consideration when regulations are made	59 (61.46)	17 (17.71)	10 (10.42)	6 (6.25)	4 (4.17)
3. There is cordial relationship between forest officers and the people	52 (54.17)	20 (20.83)	13 (13.54)	4 (4.17)	7 (7.30)
4. The forest plays important role in protecting and enriching the natural environment	56 (58.33)	20 (20.83)	12 (12.50)	4 (4.17)	4 (4.17)
5. Forest plays an important role in local traditional religions, beliefs and practices	50 (52.08)	20 (20.83)	15 (15.63)	6 (6.25)	5 (5.21)
6. It affects the economic lives of the people by providing income and jobs	66 (68.75)	20 (20.83)	5 (5.21)	5 (5.21)	0 (0.00)
7. It impacts on the people by providing products which satisfy basic needs of the family	70 (72.92)	10 (10.42)	10 (10.42)	6 (6.25)	0 (0.00)



8. The forest reserve helps in cooling the environment	51	23	6	5	1
	(53.13)	(23.96)	(6.25)	(5.21)	(1.04)

Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly Disagree (SD)

Livelihood Diversification Strategies

In the study area, smallholder farm households obtained their household income from three major categories of livelihood activities. This is in line with the work of Yizengaw *et al.* (2015). These include on-farm, non-farm, and off-farm activities. On-farm activities are focused on both crop production and animal husbandry activities. Different crops are grown in the study area. Findings show that some of the major crops grown in the study area include maize, cassava, and yam. Domestic animals like goats and poultry are reared for both income and consumption purposes. Based on the survey results, majority (76.0%) of the respondents were engaged in rearing of livestock, while 24.0% do not participate in livestock rearing activities. Off-farm activities refer to agricultural activities which take place outside an individual's own farm. The activities include local daily wage labour at village level or the neighboring areas in return for cash payment or the agricultural work at another person's farm in return for part of the harvest in kind. Natural resource based activities like firewood collection and selling is another source of off-farm income for some households in the study area. This is in line with earlier study on livelihood diversification conducted by Oladiji *et al.*, (2016) on surrounding communities around Sakpoba Forest Reserve. From the sampled respondents, only about 10% of them claimed they participated in off-farm activities while about 90% of the respondents did not participate in any one of the off-farm activities. Non-farm activities in this study refer to activities taking place outside the agricultural sector. It includes artisanship activities (weaving, spinning, carpentry, house mudding and so on), petty trade (grain trade, fruits and vegetables trade), selling of local drinks, trading of small animals and so on. From the study, 17% of the households are engaged in non-farm activities while 83% of them were not engaged in any non-farm activities. Rural farm households in the study area have followed one, two or a combination of these livelihood activities to pursue their livelihood strategies. Accordingly, six livelihood strategies were identified which include the on-farm only strategy, off-farm, non-farm, on-farm plus off-farm, on-farm plus non-farm and a combination of on-farm, off-farm and non-farm activities.



Figure 2 shows that most (30%) of the forest environment dwellers entirely depend on the on-farm-only livelihood strategy, 10% depends on off-farm only livelihood strategy, 17% of the households depends on non-farm only, 3% households depends on on-farm plus off-farm, 14% of the respondents depends on on-farm plus non-farm, and the remaining 26% of sampled respondents depended on on-farm plus off-farm plus non-farm livelihood diversification strategy.

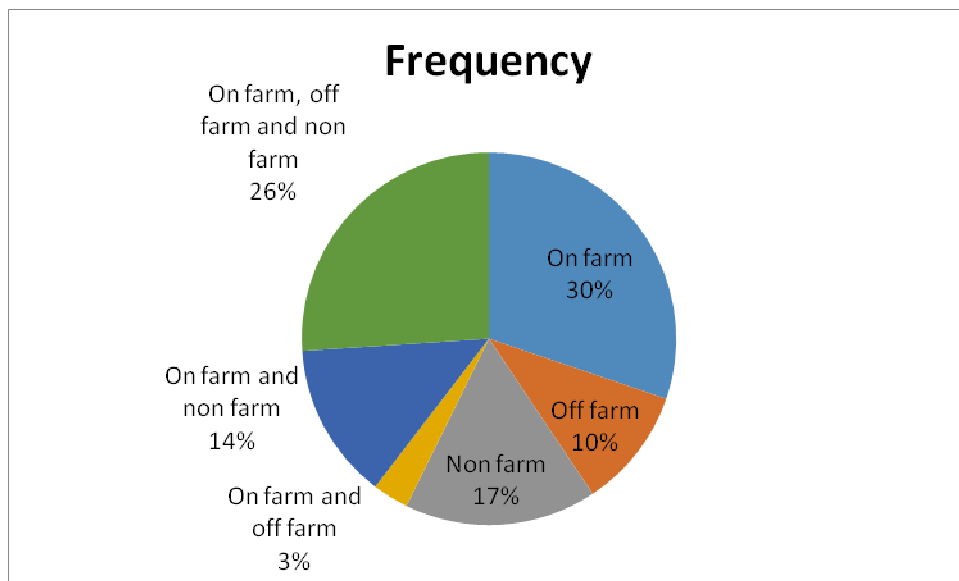


Figure2: Livelihood Diversification Strategies of Communities of Gambari Forest Reserve.

CONCLUSION AND RECOMMENDATION

The result indicates that the dwellers around the forest reserve are in their active age and therefore have the capacity to engage in diverse livelihood activities. The Gambari forest dwellers are mostly farmers. This indicates that it is an agrarian community. Findings further showed that there are three major categories of livelihood activities in which the inhabitants of the study are engaged. These are on-farm, non-farm and off-farm activities. Study further showed that the majority of the respondents entirely depend on the on-farm-only livelihood strategy. The people engaged in on-farm along with off-farm activities being the list indicates that combining farming with non-farm activities is not an easy task for the people due to the fact that such jobs are usually located in places far away from the farm. Such places have infrastructural facilities which are lacking among the communities around the forest reserve.



It is hereby recommended that the government should ensure that adequate infrastructural facilities are provided for the people living around the forest reserve. This will assist them in diversifying into other livelihood activities rather than farming and thereby reduce their encroachment into the reserve for farm land.

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